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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,623	03/17/2004	Holger Mathiszik	414-35883-US	4804

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EXAMINER	
COY, NICOLE A	
ART UNIT	**PAPER NUMBER**
3672	

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,623	MATHISZIK, HOLGER	
	Examiner	Art Unit	
	Nicole Coy	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/17/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crary et al. (USP 6,237,404).

With respect to claim 1, Crary et al. teaches a method for making measurements during drilling of a borehole, the method comprising: (a) making measurements continuously with a formation evaluation (FE) sensor on a bottom hole assembly (BHA) over a time period that includes during said drilling of said borehole (see column 2 lines 61-64); (b) concurrently making quality control (QC) measurements while said FE measurements are being made, said QC measurements including at least one measurement not related to motion of said BHA (see column 4 lines 36-40); (c) storing samples of said FE measurements in a working memory of a processor on said BHA (see column 1 lines 24-28); (d) analyzing said QC measurements (see figure 2, wherein mud flow, rotation and acceleration are analyzed); and (e) based on said analysis, storing selected samples of said FE measurements (see column 2 lines 16-24 and column 1 lines 24-29, wherein based on the QC measurements the data acquisition sequence is modified). It is unclear from Crary et al. whether the memory is a permanent memory of the processor. However, it would have been obvious to one

having ordinary skill in the art at the time of the invention to use permanent memory, in order to permanently store the modified data acquisition sequence.

With respect to claim 2, Crary et al. teaches that the FE sensor comprises at least one hydrophone responsive to a seismic signal from a surface source (see column 8 lines 1-25).

With respect to claim 3, Crary et al. teaches that the FE sensor comprises at least one geophone on a non-rotating sleeve of said BHA, said at least one geophone responsive to a seismic signal from a surface source (see column 8 lines 1-25).

With respect to claims 4 and 5, Crary et al. teaches that the at least one measurement is selected from (i) a weight on bit (WOB), (ii) flow rate of a fluid in said borehole, (iii) a level of a tube wave in said borehole, (iv) a level of motion of a non-rotating sleeve on said BHA, and (v) a measurement made by a near bit accelerometer (see column 4 lines 36-40, wherein Crary teaches mud flow, rotation acceleration, and WOB).

With respect to claim 6, Crary et al. teaches that the FE sensor comprises an accelerometer(see column 3 lines 28-32) responsive to a signal from a surface source.

With respect to claim 7, Crary et al. teaches that the FE sensor comprises an acoustic sensor (see column 8 lines 1 - 25) responsive to a signal from a source in another borehole.

With respect to claim 8, Crary et al. teaches a method for making measurements during drilling of a borehole, the method comprising: (a) making quality control (QC) measurements using a sensor on a bottom hole assembly BHA during drilling of said

borehole, said QC measurements including at least one measurement not related to a motion of said BHA (see column 4 lines 36-40); (b) analyzing said QC measurements (see figure 2. Crary et al. further teaches predicting an initial time when measurements made by a formation evaluation (FE) sensor on said BHA are expected to be of acceptable quality (see column 3 lines 54 to column 4 line 6; based on the detected downhole conditions, Crary teaches determining the mode of operation and modifying the data sequence). Crary et al. also teaches after determining the drilling mode, providing seismic measurements utilizing an acquisition mode suitable for the detected drilling mode (see column 5 lines 42-46). Crary et al. does not teach making measurements at a time earlier than said initial time. It would have been obvious to one having ordinary skill in the art at the time the invention was made to start the measurements earlier than said initial time, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involved only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 9, Crary et al. teaches that the FE sensor comprises an acoustic sensor responsive to a signal from a source at at least one of (i) a surface location, and, (ii) in another borehole (see column 8 lines 1-25).

With respect to claim 10, Crary et al. teaches that the acoustic sensor is one of (i) a hydrophone, (ii) a geophone, and, (iii) an accelerometer (see column 8 lines 1-25).

With respect to claim 11, Crary et al teaches that predicting is based at least in part on measurements made by an axial accelerometer on the BHA (see column 3 lines 28-32 and column 4 lines 46-49).

With respect to claim 12, Crary et al. teaches that predicting is based at least in part on monitoring of a mud flow in said borehole (see column 4 lines 46-49).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 7:30-5:00, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nac

William Neuder
Primary Examiner